

CLAIMS**I CLAIM:**

1. A method for image processing of a digital image comprising the steps of:
 - 5 determining one or more sets of pixel characteristics;
 - determining for each pixel characteristic set, an image editing function;
 - providing a mixing function algorithm embodied on a computer-readable medium for modifying the digital image; and
 - processing the digital image by applying the mixing function algorithm based on the
 - 10 one or more pixel characteristic sets and determined image editing functions.
2. The method of claim 1, wherein the mixing function algorithm comprises a difference function.
3. The method of claim 2, wherein the difference function algorithm calculates a value based on the difference of between pixel characteristics and one of the one or more determined
- 15 pixel characteristic sets.
4. The method of claim 1, further comprising the step of determining for each pixel characteristic set, a set of weighting values, and the processing step further comprises applying the mixing function algorithm based on the determined weighting value set.
5. The method of claim 1, wherein the mixing function algorithm includes a controlling
- 20 function for normalizing the calculations.
6. The method of claim 1, wherein a first pixel characteristic set is determined, and at least one characteristic in the first pixel characteristic set is location dependent, and at least one characteristic in the first pixel characteristic set is either color dependent, or structure dependent, or both.
- 25 7. The method of claim 1, wherein a first pixel characteristic set is determined, and at least two different characteristics in the first pixel characteristic set are from the group consisting of location dependent, color dependent, and structure dependent.
8. A method for processing of a digital image comprising the steps of:
 - receiving the coordinates of one or more than one image reference point defined by a
 - 30 user within the digital image;
 - receiving one or more than one image editing function assigned by the user and associated with the coordinates of the one or more than one defined image reference point;

providing a mixing function algorithm embodied on a computer-readable medium for modifying the digital image; and
processing the digital image by applying the mixing function algorithm based on the one or more than one assigned image editing function and the coordinates of the one or
5 more than one defined image reference point.

9. The method of claim 8, further comprising displaying a graphical icon at the coordinates of a defined image reference point.

10. The method of claim 8, the digital image comprising pixels, wherein the mixing function algorithm calculates a geometric distance between each pixel of the digital image to the
10 coordinates of the one or more than one defined image reference point.

11. The method of claim 10, the mixing function algorithm operating as a function of the calculated geometric distance from each pixel of the digital image to the coordinates of the one or more than one defined image reference point.

12. The method of claim 8, the digital image comprising pixels having image characteristics,
15 further comprising receiving one or more assigned image characteristics associated with the coordinates of one or more defined image reference point, and wherein the mixing function algorithm calculates a characteristic difference between the image characteristics of a pixel of the digital image and the one or more assigned image characteristics.

13. The method of claim 8, further comprising receiving one or more weighting values, and
20 the processing step further comprising applying the mixing function algorithm based on weighting values.

14. The method of claim 8, further comprising receiving one or more regions of interest associated with the coordinates of one or more defined image reference point.

15. The method of claim 8; the digital image comprising pixels having image characteristics,
25 wherein the mixing function algorithm calculates a characteristic difference between the image characteristics of a pixel and the image characteristics of one or more pixels neighboring the coordinates of one or more defined image reference point.

16. The method of claim 8, further comprising the step of providing an application program interface comprising a first interface to receive the coordinates of the one or more defined
30 image reference points, and a second interface to receive the one or more assigned image editing functions.

17. The method of claim 8, wherein the mixing function algorithm is selected from a group consisting of a Pythagoras distance approach, a color curves approach, a segmentation

approach, a classification approach, an expanding areas approach, and an offset vector approach.

18. The method of claim 17, wherein the segmentation approach comprises multiple segmentation.

5 19. The method of claim 17, the digital image comprising pixels having attributes, wherein the classification approach adjusts for similarity of pixel attributes.

20. A method for processing of a digital image, the digital image comprising pixels having image characteristics comprising the steps:

defining the location of image reference points within the digital image;

10 determining image editing functions; and

processing the digital image by applying the determined image editing functions based upon either the location of the defined image reference points, or the image characteristics of the pixels at the location of the defined image reference points, or both.

15 21. A method for image processing of a digital image comprising the steps of:

providing one or more than one image processing filter;

setting the coordinates of one or more than one image reference point within the digital image;

20 providing a mixing function algorithm embodied on a computer-readable medium for modifying the digital image; and

processing the digital image by applying the mixing function algorithm based on the one or more than one image processing filter and the coordinates of the one or more than one set image reference point.

25 22. The method of claim 21, wherein the one or more than one image processing filter is a noise reduction filter.

23. The method of claim 21, wherein the one or more than one image processing filter is a sharpening filter.

24. The method of claim 21, wherein the one or more than one image processing filter is a color change filter.

30 25. An application program interface embodied on a computer-readable medium for execution on a computer for image processing of a digital image, the digital image comprising pixels having image characteristics, comprising:

a first interface to receive the coordinates of each of a plurality of image reference

points defined by a user within the digital image, and
a second interface to receive an image editing function assigned by the user and
associated with either the coordinates of each of the plurality of defined image
reference points, or the image characteristics of one or more pixels neighboring the
5 coordinates of each of the plurality of defined image reference points.

26. The program interface of claim 25 wherein the second interface is to receive an image
editing function assigned by the user and associated with both the coordinates of each of the
plurality of defined image reference points, and the image characteristics of one or more
pixels neighboring the coordinates of each of the plurality of defined image reference points.

- 10 27. An application program interface embodied on a computer-readable medium for
execution on a computer for image processing of a digital image, the digital image
comprising pixels having image characteristics, comprising:
a first interface to receive the coordinates of an image reference point defined by a user
within the digital image, and
15 a second interface to receive an image editing function assigned by the user and
associated with both the coordinates of the defined image reference point, and the
image characteristics of one or more pixels neighboring the coordinates of the defined
image reference point.

28. The program interface of claim 25, further comprising a third interface that displays a
20 graphical icon at the coordinates of one or more than one of the plurality of defined image
reference points.

29. The program interface of claim 28, wherein the third interface permits repositioning of
the graphical icon.

30. The program interface of claim 25, further comprising a fourth interface that displays the
25 assigned image editing function.

31. The program interface of claim 25, wherein the second interface is further to receive one
or more than one parameter representing a weighting value.